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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,951	06/27/2003	Roderick Holley II	SIG000094	3046

34399 7590 11/29/2007

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EXAMINER	
SELLERS, DANIEL R	
ART UNIT	PAPER NUMBER
2615	
MAIL DATE	DELIVERY MODE
11/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/607,951	HOLLEY, RODERICK	
	Examiner	Art Unit	
	Daniel R. Sellers	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☒ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/17/07 have been fully considered but they are not persuasive. The examiner respectfully disagrees, wherein Lueck teaches a DSP, or a filter co-processor. This co-processor provides filtering capabilities as indicated by an equalization function (column 3, lines 35-40). Moreover, Monroe is relied upon to teach the specifics of a filter co-processor, wherein Lueck teaches the co-processor, but is silent with respect to the specific inner workings of the co-processor.

2. With respect to applicant's arguments on pages 10-11, Lueck is relied upon to teach a filter co-processor as embodied by the DSP. The secondary references are relied upon to modify, or augment, the primary reference.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1, 3, 15, 16, and 26** are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Lueck et al. (USPN 6,721,710) (hereinafter Lueck).

5. Regarding **claim 1**; Lueck teaches an integrated circuit used in an audio playback device (Col. 2, lines 38-41 and Fig. 1), where the integrated circuit comprises:

a host interface (Col. 4, lines 4-11 and Fig. 1, units 90, 120, and 140);
a processing module operably coupled to the host interface (Fig. 1, unit 120);
a multimedia module operably coupled to the processing module (Fig. 1, unit 110);
memory operably coupled to the processing module and to the multimedia module in which digital audio information is stored (Fig. 1, unit 140); *and*
a filter co-processor operably coupled to the processing module and to the memory, wherein at the direction of the processing module the filter co-processor retrieves digital audio information from the memory and filters the digital audio information (Col. 3, line 35 - Col. 4, line 3 and Fig. 1, units 124 and 185).

6. Regarding **claim 3**, the further limitation of claim 1, Lueck teaches a playback mode wherein:

the filter co-processor, at the direction of the processing module, retrieves the digital audio information from the memory, filters the digital audio information to produce filtered digital audio information and writes the filtered digital audio information to the memory (Col. 3, line 35 - Col. 4, line 3); *and*
the multimedia module receives the filtered digital audio information from memory and converts the filtered digital audio information to a playback format (Col. 3, lines 28-34 and Fig. 1, unit 170).

7. Regarding **claim 15**, see the preceding argument with respect to claim 1. Lueck teaches these features.

8. Regarding **claim 16**, the further limitation of claim 15, see the preceding argument with respect to claim 3. Lueck teaches these features.

9. Regarding **claim 26**, see the preceding argument with respect to claim 1. Lueck teaches these features.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lueck as applied to claim 1 above, and further in view of Monroe et al. (USPN 5,911,082) (hereinafter Monroe).

12. Regarding **claim 2**, the further limitation of claim 2, see the preceding argument with respect to claim 1. Lueck teaches the features of claim 1, but is silent with respect to the specifics of the filter co-processor, or digital signal processor (DSP).

Monroe teaches a filter co-processor comprising:

a plurality of programmable registers operably coupled to the processing module (Col. 6, lines 35-40 and Fig. 1 and 3, unit 30);
a Direct Memory Access (DMA) engine operably coupled to the memory and to the plurality of programmable registers (Col. 7, lines 16-41 and Fig. 1 and 5, unit 40);
a plurality of coefficient register files operably coupled to the DMA engine (Col. 6, lines 23-45);
a plurality of sample register files operably coupled to the DMA engine (Col. 6, lines 23-45);
a Multiply Accumulator (MAC) engine operably coupled to the plurality of programmable registers, the plurality of coefficient register files, and the plurality of register files (Col. 5, lines 16-27); *and*
an accumulator operably coupled to the MAC engine and to the DMA engine (Col. 6, lines 58-60 and Col. 7, lines 1-4 and Fig. 1, unit 42 and Fig. 4, units 42 and 88).

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Lueck and Monroe for the purpose of using a well-known DSP such as the Motorola DSP 96002 (Col. 6, lines 55-57 and Col. 7, lines 7-8).

13. **Claims 4, 13, 14, 17, 24, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lueck as applied to claim 3 above, and further in view of Rosefield et al. (USPN 5,963,153) (hereinafter Rosefield).

14. Regarding **claim 4**, the further limitation of claim 3, Lueck teaches the features of claim 3. However Lueck does not teach or suggest interpolation filtering. Rosefield teaches an integrated circuit to perform sample rate conversions (Col. 2, lines 23-30), and in performing these conversions, Rosefield teaches interpolation (Col. 6, lines 15-17). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Lueck and Rosefield for the purpose of providing sample rate conversion in the audio playback device.

15. Regarding **claim 13**, the further limitation of claim 1, see the preceding argument with respect to claim 1. Lueck teaches the features of claim 1, but does not teach or suggest a context switch operation with the features of claim 13.

Rosefield teaches an integrated circuit,

wherein in a context switch operation, the filter co-processor receives a context switch operation from the processing module, ceases its current filtering operations, and initiates differing filtering operations. (Col. 6, lines 10-27 and 53-65).

16. Regarding **claim 14**, the further limitation of claim 13, see the preceding argument with respect to claim 13. The combination of Lueck and Rosefield teaches these features.

17. Regarding **claim 17**, the further limitation of claim 16, see the preceding argument with respect to claim 4. The combination teaches these features.

18. Regarding **claim 24**, the further limitation of claim 15, see the preceding argument with respect to claim 13. The combination teaches these features.

19. Regarding **claim 25**, the further limitation of claim 24, see the preceding argument with respect to claim 14. The combination teaches these features.

20. **Claims 5, 6, 18, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lueck as applied to claim 3 above, and further in view of Kihara et al. (USPN 5,524,022) (hereinafter Kihara).

21. Regarding **claim 5**, the further limitation of claim 3, see the preceding argument with respect to claim 3. Lueck teaches the features of claim 3, wherein the filter co-processor performs equalization. Lueck does not teach the specifics of the equalization. Kihara teaches graphic equalization (Col. 2, lines 48-63 and Col. 3, lines 46-54). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Lueck and Kihara for the purpose of using an equalizer that has symmetrical boost and attenuation characteristics.

22. Regarding **claim 6**, the further limitation of claim 5, see the preceding argument with respect to claim 5. The combination teaches a parallel configurations using addition (Fig. 5a).

23. Regarding **claim 18**, the further limitation of claim 16, see the preceding argument with respect to claim 5. The combination teaches these features.

24. Regarding **claim 19**, the further limitation of claim 18, see the preceding argument with respect to claim 6. The combination teaches these features.

25. **Claims 7, 8, 20, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lueck as applied to claim 1 above, and further in view of Norris et al. (USPN 5,491,774) (hereinafter Norris).

26. Regarding **claim 7**, the further limitation of claim 1, see the preceding argument with respect to claim 1. Lueck teaches the features of claim 1, but does not teach or suggest a recording mode.

Norris teaches a recording mode, wherein:

> *the multimedia module receives incoming audio information, converts the incoming audio information to incoming digital audio information, and writes the incoming digital audio information to memory* (Col. 3, line 65 - Col. 4, line 2 and Col. 4, lines 50-58); *and*
> *the filter co-processor, at the direction of the processing module, retrieves the incoming digital audio information from the memory, filters the incoming digital audio information to produce filtered incoming digital audio information and writes the filtered incoming digital audio information to the memory* (Col. 5, lines 34-45, wherein the compression feature would require filtering).

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Lueck and Norris for the purpose of recording signals in a portable audio player using a microphone.

27. Regarding **claim 8**, the further limitation of claim 7, see the preceding argument with respect to claim 7. The combination teaches compressing, or decimating, the audio signal.

28. Regarding **claim 20**, the further limitation of claim 15, see the preceding argument with respect to claim 7. The combination teaches these features.

29. Regarding **claim 21**, the further limitation of claim 20, see the preceding argument with respect to claim 8. The combination teaches these features.

30. **Claims 9-12 and 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lueck as applied to claim 1 above, and further in view of Nicol (USPN 6,282,661).

31. Regarding **claim 9**, the further limitation of claim 1, see the preceding argument with respect to claim 1. Lueck teaches the features of claim 1, but does not teach the features of claim 9. Nicol teaches a method of power reduction in integrated circuits (abstract), wherein the clock supplied to the filter co-processor is varied (Col. 2, lines 24-37). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Lueck and Nicol for the purpose of reducing power consumption.

32. Regarding **claim 10**, the further limitation of claim 9, see the preceding argument with respect to claim 9. The combination teaches varying the frequency of a clock to the filter co-processor, and Lueck teaches using the same clock for both the filter co-processor and the processing module (Col. 3, lines 41-46).

33. Regarding **claim 11**, the further limitation of claim 1, see the preceding argument with respect to claim 9. The combination teaches varying the supply voltage to the filter co-processor (Nicol, Col. 2, lines 35-37).

34. Regarding **claim 12**, the further limitation of claim 11, see the preceding argument with respect to claim 11. The combination teaches varying the supply voltage to the processing module (inherent in view of Nicol, Col. 2, lines 35-37 and Lueck, Col. 3, lines 41-46).

35. Regarding **claim 22**, the further limitation of claim 15, see the preceding argument with respect to claim 9. The combination teaches varying the frequency supplied to the filter co-processor.

36. Regarding **claim 23**, the further limitation of claim 22, see the preceding argument with respect to claim 11. The combination teaches varying the supply voltage to the filter co-processor.

Conclusion

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Daberko et al. (USPN 5,839,108) teaches an integrated circuit for a portable audio player (Fig. 1-3, and Col. 4, lines 38-67);

Cowgill et al. (USPN 6,606,281) teaches a digital audio player (abstract);

Georges (USPN 7,176,372) teaches a digital multi-media player (abstract); and

Johnson et al. (US PGPub 2004/0252604) teaches another digital audio player (abstract).

38. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel R. Sellers whose telephone number is 571-272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DRS

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